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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/744,445	01/22/2001	Uzi Sharon	153/01963	5079

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EXAMINER

FARAH, AHMED M

ART UNIT

PAPER NUMBER

3739

DATE MAILED: 11/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/744,445

Applicant(s)
Uzi Sharon

Examiner
A. Farah

Art Unit
3739

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE one MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.
- ### Disposition of Claims
- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above, claim(s) 43-56 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 3 and 5 6) ☐ Other:

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DETAILED ACTION

Election/Restriction

1. Claims 43-56 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made in Paper No. 8. Since the applicant did not state the status of the election as being *with* or *without traverse*, this Office Action treats the election as being made without traverse.

Specification

2. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 4-8, 12-25, 19, 22 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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o/c ✓ A) As to claims 4-7, claim 4 recites the limitation "area characteristic of the size distribution of areas occupied on the skin by features to be treated." This limitation fails to point out what is included or excluded by the claim language and therefore renders the claims indefinite. In this Office Action, claim 4 is treated that as if the cross section of the irradiated (focused treatment light) is little bit larger than the skin area occupied by the feature being treated.

o/c ✓ B) As to claims 8 and 12, the applicant fails to clearly state what is included or excluded by the claim language.

o/c ✓ C) As to claims 13-25, the recitation "photosurface responsive to an imaging region" in line 2 of claim 13 renders the claims indefinite. In this Office Action, the word photosurface in the claim is treated as 'photosensitive surface.'

C) As to claims 19, 22, 23 and 25, the applicant fails to clearly set forth the metes and bound of the patent protection desired. These claims are directed to an intended use. It is suggested that the applicant positively recite the features in which he regards the invention.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-14, 20, 21 and 26~~27-42~~^{are} rejected under 35 U.S.C. 102(b) as being anticipated by Zavislan et al. U.S. Patent 5,653,706.

As to claims 1, 8 and 42, Zavislan et al. disclose dermatological laser treatment system and methods of use, the treatment system comprising:

an imaging subsystem (CCD camera **48**; display **40**; and monitor **26**) that locates features on the skin to be treated (see Figs. 2- 4);

a laser system **20**, which provides the treatment light;

laser optics (lens **68**, focusing mechanism **69**, and focussing lens **42**) that focuses light from the laser onto a feature located by the imaging subsystem **48** (see Fig. 4 and Col. 6, lines 34-45); and

a controller **24**, that when a feature is located, controls the laser to radiate a pulse of laser light that is focused by the laser optics to the treatment site.

As to claim 2, the treatment system further comprises an illumination light **52** that illuminates regions imaged by the imaging optics (Col. 5, lines 61-63).

As to claim 3, Zavislan et al. use a single laser source, which provides laser pulses in the wavelength range of between 700 to 1300 nm (see claim 1). Hence, since their laser is operable to varying in wavelength over a given range, it is considered to be a tunable laser.

If it is considered as a broad-band light source, it is not a laser

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As to claims 4-7, the cross sectional area of the focused treatment light is relatively larger than the size of the targeted features. For instance, if the system is used to destroy endothelial cells in blood vessel, the spot to which the laser is focused is inherently larger than the area occupied by the skin feature being targeted.

As to claim 9, scan mirror **54** of the imaging subsystem scans an area of the skin and automatically locates the features on the skin to be treated (see Col. 3, lines 38-42; and Col. 6, lines 14-16 and lines 25-30).

As to claims 10 and 14, the imaging subsystem comprises at least one photosensitive surface (CCD video camera **48**) and the imaging optics (optical element **54**) are moved relative to the skin.

As to claim 13, the CCD video camera **48** inherently has a circuitry that receives and process signals generated by photosensitive to provide visual image of the desired feature.

As to claims 20 and 21, charged coupled devices (CCD) comprise semiconductor arrays (multiple photosensitive surfaces) in which charges are introduced when light from a scene is focused on the surface of the device.

As to claims 26 and 27, the imaging optics comprises an objective lens system (focusing lens **42**), which collects light from the treatment site, and an ocular lens (rear lens **44**) that receives light collected by the objective lens system and images the received light on photosensitive surface (see Fig. 3).

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As to claims 29, 30 and 35 the laser optics comprise a collimating lens **68** that receives light irradiated by the laser; an actuator (focusing mechanism **69**), which moves (rotates) the focusing lens; and a reflector (beam splitter **54** which is also a part of the imaging subsystem) that reflects the collimated laser light towards the objective lens system (lens **42**) so as to focus the laser light to a spot at the focal point of the objective lens system as presently claimed.

As to claim 32, the ocular lens system (lens **44**) and at least one photosensitive surface (CCD camera **48**) are positioned on a side of the reflector opposite to the side of the reflector on which the objective lens system is located. See Fig. 3.

As to claims 31 and 33, reflector **54** reflects the laser light towards the treatment site (behaves like a mirror); and partially transmits the light reflected from the tissue surface towards the CCD camera (behaves like a beam splitter).

As to claim 34, the ocular lens (lens **44**) and the photosensitive surface are stationary with respect to the axis of rotation.

As to claim 36, the actuator (focusing mechanism **69** that is coupled to focusing lens **68**) further moves the focusing lens back and forth and would provide a planar arc having a fixed length.

As to claims 37-41, the imaging subsystem (lens **44** and CCD camera **48**); the light source (illumination light **52**); the laser (optical fiber **22**); the controller; and the power source are all mounted on handpiece **10**. See Figs. 1-3.

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Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 15-19 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zavislan et al. in view of Bolger et al. U.S. Pat. No. 5,437,290.

Zavislan et al., described above, do not use quadrature detector. However, Bolger et al. teach a medical system and method in which quadrature detection system is used to monitor the position and penetration depth of intraluminal catheter during vascular treatment. It is known in the art that quadrature components (i.e., amplifiers, detectors, etc) shift the phase of a signal 90°. It also known that such components are used with color television components such as CCD's. Therefore, it would have been obvious to one skilled in the art at the time of the applicant's invention to modify Zavislan et al. in view of Boger et al. and use quadrature detector in order to monitor out-of-phase signals reflected from the different tissues (targeted and un-targeted) at the treatment site.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See the following references:

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U.S. Patent 5,865,829 to Kitajima discloses medical optical system comprising an illumination light, a treatment laser, an imaging system, and a controller that controls the operations of the system.

U.S. Patent 5,823,993 to Lemelson discloses computerized medical system for treating skin/tissue disorders wherein the treatment site is imaged by employing, for example, computerized axial tomography (CAT scanning), magnetic resonance imaging (MRI), or ultrasonography.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Farah whose telephone number is (703) 305-5787. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Linda Dvorak, can be reached on (703) 308-0994. The fax number for the Examiner is (703) 746-3368.

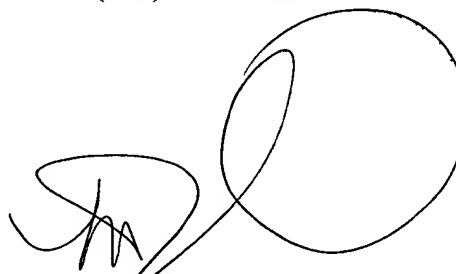
A. M. Farah



Patent Examiner

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November 16, 2002



Linda C. M. Dvorak

Supervisory Patent Examiner